IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of   Atty. Docket

ALEXEI GOROKHOV ET AL.   NL 010037

Serial No.   Group Art Unit

Filed: CONCURRENTLY   Ex.

Title: TRANSMISSION SYSTEM FOR TRANSMITTING A MULTILEVEL SIGNAL

Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

    Prior to calculation of the filing fee and examination, please amend the above-identified application as follows:

IN THE CLAIMS

    Please amend claims 3-7, 10, 13, 16, 19, 22 and 25-29 as follows:

3. (Amended)   The transmission system according to claim 1, wherein $\overline{H_1}$ has a substantially minimum value, with $\overline{H_1}$ being the average Hamming distance between all pairs of labels corresponding to neighboring signal points.

4. (Amended)   The transmission system according to claim 1, wherein the signal constellation is a 16-QAM signal constellation as depicted in any one of the Figs. 8A to 8G or an equivalent signal constellation thereof.

5. (Amended)   The transmission system according to claim 1, wherein the signal constellation is a 64-QAM signal constellation as depicted in any one of the Figs. 9A to 9C and 10 or an equivalent signal constellation thereof.

1   6. (Amended)   The transmission system according to claim 1,
2   wherein the signal constellation is a 256-QAM signal constellation
3   as depicted in any one of the Figs. 11A and 11B or an equivalent
4   signal constellation thereof.

1   7. (Amended)   The transmission system according to claim 1,
2   wherein the signal constellation is a 8-PSK signal constellation as
3   depicted in any one of the Figs. 12A to 12C or an equivalent signal
4   constellation thereof.

1   10. (Amended)   A transmitter (10) according to claim 8, wherein
2    $\overline{H_1}$ has a substantially minimum value, with $\overline{H_1}$ being the average
3   Hamming distance between all pairs of labels corresponding to
4   neighboring signal points.

1   13. (Amended)   The receiver (20) according to claim 11, wherein
2    $\overline{H_1}$ has a substantially minimum value, with $\overline{H_1}$ being the average
3   Hamming distance between all pairs of labels corresponding to
4   neighboring signal points.

1   16. (Amended)   The mapper (16) according to claim 14, wherein $\overline{H_1}$
2   has a substantially minimum value, with $\overline{H_1}$ being the average
3   Hamming distance between all pairs of labels corresponding to
4   neighboring signal points.

1   19. (Amended)   The demapper (22) according to claim 17, wherein
2    $\overline{H_1}$ has a substantially minimum value, with $\overline{H_1}$ being the average
3   Hamming distance between all pairs of labels corresponding to
4   neighboring signal points.

1   22. (Amended)   The method according to claim 20, wherein $\overline{H_1}$ has a
2   substantially minimum value, with $\overline{H_1}$ being the average Hamming

3   distance between all pairs of labels corresponding to neighboring

4   signal points.

1   25. (Amended)   The multilevel signal according to claim 23,

2   wherein $\overline{H_1}$ has a substantially minimum value, with $\overline{H_1}$ being the

3   average Hamming distance between all pairs of labels corresponding

4   to neighboring signal points.

1   26. (Amended)   The multilevel signal according to claim 23,

2   wherein the signal constellation is a 16-QAM signal constellation

3   as depicted in any one of the Figs. 8A to 8G or an equivalent

4   signal constellation thereof.

1   27. (Amended)   The multilevel signal according to claim 23,

2   wherein the signal constellation is a 64-QAM signal constellation

3   as depicted in any one of the Figs. 9A to 9C and 10 or an

4   equivalent signal constellation thereof.

1   28. (Amended)   The multilevel signal according to claim 23,

2   wherein the signal constellation is a 256-QAM signal constellation

3   as depicted in any one of the Figs. 11A and 11B or an equivalent
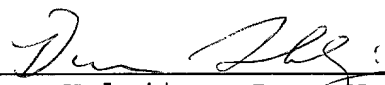
4   signal constellation thereof.

1   29. (Amended)   The multilevel signal according to claim 23,

2   wherein the signal constellation is a 8-PSK signal constellation as

3   depicted in any one of the Figs. 12A to 12C or an equivalent signal

4   constellation thereof.

REMARKS

The foregoing amendment to claims 3-7, 10, 13, 16, 19, 22 and 25-29 were made solely to avoid filing the claims in the multiple dependent form so as to avoid the additional filing fee.

The claims were not amended in order to address issues of patentability and Applicant respectfully reserves all rights under the Doctrine of Equivalents. Applicant furthermore reserves the right to reintroduce subject matter deleted herein at a later time during the prosecution of this application or continuing applications.

Respectfully submitted,

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January 14, 2002

Appendix A

Version with Markings
to Show Changes Made to the Claim
The following are marked up versions of amended claims 3-7,

10, 13, 16, 19, 22 and 25-29:

1   3. (Amended)   The transmission system according to claim 1 or 2,

2   wherein $\overline{H_1}$ has a substantially minimum value, with $\overline{H_1}$ being the

3   average Hamming distance between all pairs of labels corresponding

4   to neighboring signal points.

1   4. (Amended)   The transmission system according to claim 1 or 2,

2   wherein the signal constellation is a 16-QAM signal constellation

3   as depicted in any one of the Figs. 8A to 8G or an equivalent

4   signal constellation thereof.

1   5. (Amended)   The transmission system according to claim 1 or 2,

2   wherein the signal constellation is a 64-QAM signal constellation

3   as depicted in any one of the Figs. 9A to 9C and 10 or an

4   equivalent signal constellation thereof.

1   6. (Amended)   The transmission system according to claim 1 or 2,

2   wherein the signal constellation is a 256-QAM signal constellation

3   as depicted in any one of the Figs. 11A and 11B or an equivalent

4   signal constellation thereof.

1   7. (Amended)   The transmission system according to claim 1 or 2,

2   wherein the signal constellation is a 8-PSK signal constellation as

3   depicted in any one of the Figs. 12A to 12C or an equivalent signal

4   constellation thereof.

1   10. (Amended)   A transmitter (10) according to claim 8 or 9,

2   wherein $\overline{H_1}$ has a substantially minimum value, with $\overline{H_1}$ being the

3   average Hamming distance between all pairs of labels corresponding
4   to neighboring signal points.

1   13. (Amended)   The receiver (20) according to claim 11 or 12,
2   wherein $\overline{H_1}$ has a substantially minimum value, with $\overline{H_1}$ being the
3   average Hamming distance between all pairs of labels corresponding
4   to neighboring signal points.

1   16. (Amended)   The mapper (16) according to claim 14 or 15,
2   wherein $\overline{H_1}$ has a substantially minimum value, with $\overline{H_1}$ being the
3   average Hamming distance between all pairs of labels corresponding
4   to neighboring signal points.

1   19. (Amended)   The demapper (22) according to claim 17 or 18,
2   wherein $\overline{H_1}$ has a substantially minimum value, with $\overline{H_1}$ being the
3   average Hamming distance between all pairs of labels corresponding
4   to neighboring signal points.

1   22. (Amended)   The method according to claim 20 or 21, wherein $\overline{H_1}$
2   has a substantially minimum value, with $\overline{H_1}$ being the average
3   Hamming distance between all pairs of labels corresponding to
4   neighboring signal points.

1   25. (Amended)   The multilevel signal according to claim 23 or 24,
2   wherein $\overline{H_1}$ has a substantially minimum value, with $\overline{H_1}$ being the
3   average Hamming distance between all pairs of labels corresponding
4   to neighboring signal points.

1   26. (Amended)   The multilevel signal according to claim 23 or 24,
2   wherein the signal constellation is a 16-QAM signal constellation
3   as depicted in any one of the Figs. 8A to 8G or an equivalent
4   signal constellation thereof.

1 27. (Amended)   The multilevel signal according to claim 23 or 24,
2 wherein the signal constellation is a 64-QAM signal constellation
3 as depicted in any one of the Figs. 9A to 9C and 10 or an
4 equivalent signal constellation thereof.

1 28. (Amended)   The multilevel signal according to claim 23 or 24,
2 wherein the signal constellation is a 256-QAM signal constellation
3 as depicted in any one of the Figs. 11A and 11B or an equivalent
4 signal constellation thereof.

1 29. (Amended)   The multilevel signal according to claim 23 or 24,
2 wherein the signal constellation is a 8-PSK signal constellation as
3 depicted in any one of the Figs. 12A to 12C or an equivalent signal
4 constellation thereof.